

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	ROBERTS	Examiner:	K. NGUYEN
Serial No.:	09/835,040	Group Art Unit:	2629
Filed:	NOVEMBER 27, 2002	Docket No.:	56700US002
Title:	METHOD AND APPARATUS FOR FORCE-BASED TOUCH INPUT		

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant respectfully requests a Pre-Appeal Brief Request for Review, based upon the Examiner's failure to establish a prima facie case of obviousness under 35 U.S.C. §103. As outlined in greater detail below, the applied references fail to disclose one or more claimed elements. For this reason, the rejections under 35 U.S.C. §103 are clearly improper and must be reversed.

Status of the Claims

Claims 111-164 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over Frisch et al. (U.S. 5,854,625) in view of Figie et al. (U.S. 5,872,561).

Review is requested for the following reasons:

The rejection is improper insofar as Frisch fails to disclose the features recited in Appellant's claims and provides no teaching that would have suggested the desirability of modification to include such features. Moreover, Figie fails to provide any teaching that would have led a person of ordinary skill in the art to modify the teaching of Frisch to arrive at Appellant's claimed invention. For these reasons, some of which are further detailed below, the Examiner's rejections are clearly improper and without basis, and impart deficiency in the prima facie case the Examiner must make, as required by regulations.

Before addressing the details of the claim rejections, Appellant provides the following brief summaries of Frisch and Figie, which are relied on to reject every claim. Frisch discloses a variation of commonly known touch sensitive devices. Frisch discloses a touch sensitive device 10 that includes a frame member 12 that supports a top planar member 14. The planar member 14 is configured with a plurality of slots 16 that define a plurality of spring portions 20 and an outer mounting ring 22 spaced peripherally around a touch surface 18. A plurality of capacitors 24 are disposed at the periphery of the touch surface 18 between the top planar member 14 and the frame member 12. The capacitors 24 include a first member 24a disposed on the bottom of the touch surface 18 and a second plate 24b disposed on or integral with the frame member 12. The capacitors 24 function as the "sensors" of the device 10. When a touch force is applied to the touch surface portion 18 of the top or planar member 14, the touch surface 18 moves relative to the frame 12. As the touch surface 18 moves, the distance between the capacitive plates 24a, 24b changes thus creating a change in capacitive value that can be measured and used to determine a location of the touch force applied to the touch surface 18.

The capacitors 24 disclosed by Frisch are flat plates (see Figures 1, 2A and 2B of Frisch). The capacitors 24 have no other structure besides the flat plates shown. Further, the plates 24a, 24b are intended to maintain the same size and shape so as to provide a consistent change in the capacitive value with a change in distance between the two plates. Further, it is clear from Frisch that the touch surface 18, being part of the top planar member 14, is a distinct and separate member from the capacitors 24. Thus, it would be improper to interpret any feature of the top planar member 14 as being part of the capacitors 24.

Frisch also discloses spring members 20 that perform those functions described above for springs of commonly known touch sensitive devices. The springs 20 allow the touch surface 18 move relative to the frame 12 while helping retain the touch surface 18 in a predetermined rest state/position. The only member or feature of the device 10 disclosed by Frisch that flexes or has any elastic properties is the spring members 20 and the connection point of those spring members 20 to the mounting ring 22 and the touch surface 18. The capacitive plates 24a, 24b disclosed by Frisch do not include an elastic element. The spring members 20 disclosed by Frisch are separate and distinct from the capacitive plates 24a, 24b.

Figie fails to remedy the deficiencies of Frisch as it relates to claims 111 and 140. Figie discloses a switch matrix 10 that includes an outer membrane 12 and a rearward membrane 16. Each membrane is constructed of a flexible, electrically insulating, transparent material. The insulating properties prohibit the membranes 12, 16 from functioning as a capacitive member. A plurality of contacts 14 are positioned on a rear surface of the membrane 12, and a plurality of contacts 18 are positioned on a front surface of the membrane 16 directly across from individual contacts 14. The membranes 12, 16 are arranged such that when a finger or stylus presses down upon the membrane 12, the membrane 12 is deformed to cause contact 14 (which remains undeformed) to touch corresponding contact 18. When the contacts 14, 18 engage, a current flows therebetween to provide a switch function. The membranes 12, 16 remain separated by insulating spacers until the membrane 12 is engaged by a stylus/finger. The contacts 14, 18 do not function as a capacitive structure, wherein a change in capacitance of the capacitive structure is monitored as part of a sensor device. The contacts 14, 18 are components of a switch element 26 that operates only upon engagement of the contacts 14, 18 to generate current flow.

Frisch and Figie do not disclose or suggest all necessary elements as required under 103(a)

Claims 111-164 were rejected under 103(a) as unpatentable over Frisch in view of Figie. Claims 111-164 are directed to a force sensor for sensing a touch force applied to a touch surface. As claimed, the force sensor is a separate subcomponent of a touch sensitive device that is defined without reference to other features of the touch sensitive device. The claimed force sensors include "a first capacitor plate at least a portion of which is an elastic element that allows the first capacitor plate to move" (claim 111) or "a first capacitor plate having an elastic element portion" (claim 140). The claimed force sensors also include a second capacitor plate, wherein transmission of at least part of the touch force through the elastic element contributes to a change in capacitance between the first capacitor plate and the second capacitor plate. In other force sensitive touch devices, including those disclosed by Frisch, the force sensors do not include elastic elements that are part of a capacitor plate. In fact, in the pending final rejection dated July 20, 2007, the Examiner agrees that Frisch does not disclose a first element (i.e., the capacitor plate 24a) having at least a portion is an elastic element.

The membrane 12 disclosed by Figie is not an elastic element portion of a capacitor plate as the rejection contends. The membrane 12 is a flexible, insulating substrate that supports an electrical contact 14 of a switch element 26. An insulating material is not capacitive. Furthermore, the membrane 12 is a separate and distinct structure from the contacts 14. There is no disclosure or suggestion in Figie that the membrane 12 is "a portion" of the contacts 14. Therefore, Figie fails to remedy the deficiencies of Frisch, as the combination of Frisch and Figie fails to disclose or suggest "a first capacitor plate at least a portion of which is an elastic element that allows the first capacitor plate to move" (claim 111) or "a first capacitor plate having an elastic element portion" (claim 140). Furthermore, one of ordinary skill in the art would find no motivation in Figie to modify the plates 24a, 24b of Frisch to include "an elastic element" or "an elastic element portion" that is part of the plate 24a, 24b, because Figie only teaches a separate and distinct feature (i.e., membrane 12) that has insulative rather than conductive properties as is taught by Figie. Thus, neither Frisch nor Figie, alone or in combination, discloses or suggests every limitation of claims 111 and 140 and the claims that depend from them.

Further to the above, Frisch and Figie fail to disclose or suggest a first substantially planar element of a force sensor wherein "the elastic element portion defining an integral elevated feature of the first capacitor plate, the elastic element portion receiving at least part of the touch force into the first capacitor plate," as required by claim 140. The features in Frisch and Figie identified by the Examiner as being elastic features (i.e., the insulative membrane 12) are not an integral part of a capacitive plate and are not an elevated feature of a capacitor plate. Therefore, Frisch and Figie fail to disclose or suggest every limitation of claim 140 for this additional reason.

For at least these reasons, the Examiner has failed to establish a prima facie case of obviousness for Appellant's claims.

Conclusion

The Examiner's rejection of claims 111-164 under 35 U.S.C. §103(a) as being unpatentable over Frisch in view of Figie, is in error insofar as the combination of Frisch and Figie clearly lacks the features attributed to them by the Examiner. Appellant request a review and a panel decision that promptly resolves the issues in Appellant's favor and eliminates the

need for an Appellate Brief. For at least the reasons set forth above, all rejections must be reversed.

By setting forth the clear grounds of error, Appellant does not assert that these are the only errors that the Examiner has made, nor does Appellant waive any arguments that may be asserted in an Appeal Brief. Accordingly, Appellant reserves the right to present additional arguments in the Appeal Brief in relation to the independent and also the dependent claims.

It is believed that no fee is due; however, in the event a fee is required, please charge the fee to Deposit Account No. 13-2725. Please continue to direct all future correspondence to Office of Intellectual Property Counsel, 3M Innovative Property Company, P.O. Box 33427, St. Paul, Minnesota 55133-3427.

Respectfully submitted,

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Date: October 22, 2007

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